REMARKS

35 U.S.C § 102

The examiner rejected Claims 1-8, 10, 12, 15, 51-55, 59-68, 83-85, 87 and 89 under 35 U.S.C. 102(b) as being anticipated by Johnson (US Patent 6,955,187).

Claim 1

The examiner argued:

> **Regarding claims 1-3, 51-53 and 59-61, Johnson teaches a battery having a control valve for controlling airflow into the battery. The control portion is made of two cylindrical sleeves, or members, having holes, that can be moved into or out of registration depending on whether air is required for the cell. The movement is controlled by actuators that are attached to the cylinders (abstract; Figure 1; column 3 lines 9-11). Further, Johnson teaches that the current required to induce a shape change in the actuators is generated by electricity from the electrochemical cell (column 4 lines 15-17).**

Claim 1 is neither described nor suggested by Johnson. Specifically, Johnson discloses two actuator members. Johnson relies on the length of one of the actuator members to change to open the air valve and the length of the other actuator member to close the air valve. In contrast, Applicant provides "… a member whose shape deforms …, the member … coupled to one of the first and second members to move the one … such that when current is drawn from the battery, the member has a first shape that allows air to pass … and the member has a second shape that causes the one … to move and inhibit air from passing through the opening."

In short, Applicant accomplishes with one shape changing member what is required by two shape changing members of Johnson. Accordingly, claim 1 cannot be anticipated by Johnson because Johnson does not include all of the features of claim 1, arranged as in claim 1.

Claims 2-7 are allowable at least for the reasons discussed in claim 1.

Claim 8

The examiner argues that: "**Regarding claims 8, 66 and 84, Johnson teaches that when the valve is in the fully off position, no current flows from the cell to the wire actuator (column 5 lines 22-27).** Claim 8 requires that

the actuator is coupled to a circuit, and the circuit only draws power during a change of state allowing the circuit to minimize drain on the battery.

Claim 10

At the outset, Applicant believes that this rejection is improper. Claim 10 depends from claim 9, but claim 9 was rejected as being obvious over the combination of Johnson and Brotz. Therefore, the treatment of claim 10 is discussed below in conjunction with the rejection under 35 U.S.C. 103.

Claim 51

Claim 51 includes the feature of: "... passing current through a member to move from a first position to a second position a first cylindrical member ... when current is not drawn from the battery the member causes the first cylindrical member to return to the first position such that the holes are not in registration inhibiting air to pass into the battery."

Claim 51 requires that the same member is used to open and close the value produced by movement of the first and second cylindrical members. Such an arrangement is not taught by Johnson.

Claims 52-55 are allowable at least for the reasons discussed in claim 51.

Claims 59-70 are allowable at least for analogous reasons discussed in claim 1.

Claims 83, 85 and 87, are allowable at least for analogous reasons discussed in claim 1.

35 U.S.C § 103

The examiner rejected Claims 13, 69 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson.

The teachings of Johnson as discussed above are incorporated herein.

Johnson discloses the claimed invention except for the shape memory alloy actuator being in the shape of a ribbon instead of a wire. It would have been an obvious matter of design choice to use a ribbon or a wire, since such a modification would have involved a mere change in the shape of the component. A change in shape is generally recognized as being within the level of ordinary skill in the art. MPEP 2144.04 (IV B)

Claim 13 recites that "the actuator is a ribbon, wherein the first and second members are coaxially disposed cylinders each having a plurality of openings arranged in a column along the length of the cylinders."

Applicant's use of a wire or a ribbon is neither a mere design choice nor an obvious change of shape, but a functional limitation because it imparts greater displacing force to the claimed arrangement and thus is entitled to patentable weight.

The examiner rejected Claims 9 and 11 under 35 U.S.C. 103(a) as being unpatentable over Johnson as applied to claim 6 above, and further in view of Brotz (US 5,588,295).

Claim 9 requires "... the actuator is a wire with the wire changing between a convex shape and a concave shape to change the position of the second cylinder." In response to Applicant's prior reply, the examiner reasoned that:

> **Next, Applicants argue that motivation is lacking to replace the wires, described above, with the actuator of Brotz. Motivation is provided on page 5 of the Final Rejection, mailed April 5, 2007. That motivation includes eliminating the need for both the latch and actuator mechanism of Johnson, resulting in a cell with fewer parts. Applicants argue that Johnson fails to teach that the actuator only draws power during a change of state. This would be inherent, since if the shape memory alloy actuator of Johnson was drawing power, it would inherently be changing state, so if it is not changing state it cannot be drawing power.**

Brotz discloses a "Tri-strip memory metal actuator." Brotz provides a mechanism that has concave and convex shapes. However, neither Brotz nor Johnson teaches a mechanism that would use these properties in the battery of claim 9.

This follows because claim 1, further requires: "a member whose shape deforms in response to a current drawn from the battery, ... to move the first one of the first and second members such that when current is drawn from the battery, the member has a first shape that allows air to pass ... into the battery and the member has a second shape that causes the one of the first and second members to move and inhibit air from passing through the opening and into the battery." Johnson, in contrast, teaches an arrangement that requires two separate mechanisms, i.e., rods, to accomplish the opening and closing.

Claim 9 requires that the actuator is a wire with the wire changes between a convex shape and a concave shape to change the position of the second cylinder. Brotz together with Johnson do not teach the placement of the wire of claim 9.

The Supreme Court in *KSR Intl. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007), even while stating that: "the Court of Appeals drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias," warns that: "a factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning."

> The Court of Appeals, finally, drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias. A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. See *Graham*, 383 U. S., at 36 (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "'guard against slipping into the use of hindsight'" (quoting *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332 F. 2d 406, 412 (CA6 1964))). Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.

The examiner's rejection is a clear exercise in *ex post* reasoning. The examiner in reasoning that there is motivation to combine argues: "**That motivation includes eliminating the need for both the latch and actuator mechanism of Johnson, resulting in a cell with fewer parts.**" However, Applicant contends that this is not a motivation but an advantage, and an advantage that is only gleaned from knowledge of Applicant's invention. Merely because a reference discloses a mechanism that has a convex/concave shape, does not provide any motivation to suggest the claimed mechanism in combination with the teachings of Johnson. Sustaining such an argument would doom every patent application to an unsupported while at the same time, uncontestable obviousness rejection because it begs the question: Why would the person of ordinary skill have made the decision to use the claimed mechanism arranged as in claim 9?

Claim 10 requires: "a member coupled between an upper end portion of the second member and the wire to transfer a force generated by the wire to the second member."

The examiner maintains the reasoning that: "**Regarding claims 10, 12 and 68, it can be seen in Figures 5 and 6 of Johnson that a member is coupled between the actuator and the upper end portion of the second member.**" and further explains that: "**Applicants argue that Johnson does not teach a member between the**

actuator and the first/second member. The examiner points Applicants to Figures 5 and 6. The actuator mechanism, 29, is attached to the inner member of the can by a rod."

Applicant disagrees. In Figs. 5 and 6, Johnson uses "29" to delineate the actuator mechanism, not the claimed member coupled between an upper end portion of the second member and the wire to transfer a force generated by the wire to the second member. Johnson later describes that: **"Actuator mechanism 29 comprises a pair of an "on" actuator element 34 and an "off" actuator element 36 (FIGS. 7-10)."** Therefore, nothing in Johnson therefore can be construed to correspond to the "member coupled between an upper end portion of the second member and the wire to transfer a force generated by the wire to the second member."

No fee is due. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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